Decision and Risk Analysis

Research Area: Value Focused Thinking

Recent Findings

A technology selection model was developed for the Air Vehicles Directorate of Air Force Research Laboratory. The model was developed and demonstrated to aid in addressing the question of what technologies Air Vehicles' should invest in to remain consistent with Air Force values. Another recent effort used a systems engineering and decision analysis approach in which a number of different alternatives for on-orbit satellite repair and upgrade were analyzed for the Global Positioning System Joint Program Office. This approach involved defining the problem framework and desired user benefits, then developing different system architectures and determining their performance with regard to the specified benefits. Decision analysis was then used to evaluate the alternative architectures in the context of the user's goals. Technological assessment and evaluation has been a critical use for VFT approaches. Work has been conducted for a number of DOD and government agencies.

Modeling Resources

AFIT Router: A decision support model built in *JAVA* provides a capability to route vehicles. The tool is specifically tailored to support UAV routing applications.

Hierarchical Interactive Theater Model (HITM): A prototype model built in *JAVA*, HITM examines the strategic effects possibilities of decision cycle linkages within a military structure.

For further information or to suggest a related thesis topic, please contact: Capt Stephen P. Chambal; Dr Richard F. Deckro; Lt Col Mark A. Gallagher; Lt Col Raymond R. Hill Departmental web site: http://en.afit.edu/ens/

Modeling Strategic Effects: New Techniques